

Adult Mosquito Surveillance



Clark County
Year End Report
2003

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Clark County Mosquito Control District

Adult Mosquito Surveillance

2003

Introduction

The adult mosquito surveillance program of the Clark County Mosquito Control District is now in full operation. As mentioned in last year's report, prior to 2002 this program was contracted to Multnomah County. Last year we took on this program ourselves. Traps were purchased and a limited surveillance program was undertaken.

The 2003 surveillance program was able to begin when the season first got underway. Trapping and identification went on throughout the entire mosquito year. One addition to the program this year was the purchase of a "Vec-Test" kit. This allowed us to test mosquito pools for the presence of West Nile virus and St. Louis encephalitis.

The surveillance program is multi-faceted. Along with the encephalitis surveillance traps, there are also the activities of larvae collection and identification, daily recording of river levels, and collection of dead birds for West Nile virus testing. The combination of all these efforts allows us to monitor mosquito populations and species and alerts us to the presence of a potential human health hazard.

The information provided in this report shows trapping sites and results, larvae collection and species found, river levels, and West Nile virus testing results from Clark County and the State of Washington.

The Clark County Mosquito Control District will continue the surveillance program in the coming years, and will continue to upgrade equipment and education so that we can better meet our goal. This goal, simply stated, is to reduce mosquito populations in the effort to minimize mosquito-borne diseases.

Trapping Results

2003

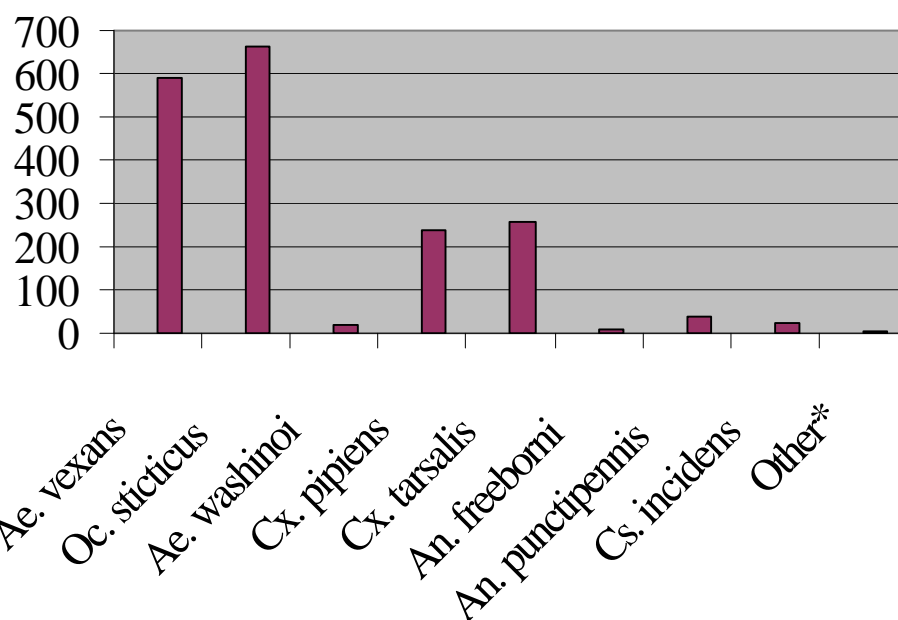
The following charts are representations of trapping done in 2003. They are broken down by areas and also include the numbers for individual traps. The charts represent only the number of mosquitoes that were placed under the microscope. In all, approximately 11,000 mosquitoes were trapped with over 1,800 undergoing the identification process.

Species Trapped — 2003

The chart below indicates the species of mosquitoes that have been identified during each year. These are the samples that are brought back to the shop by the crew after surveying a site.

	Aedes vexans	Ochlerotatus sticticus	Aedes cinereus	Ochlerotatus sierrensis	Ochlerotatus increpitus	Culex pipiens	Culex tarsalis	Anopheles freeborni	Anopheles punctipennis	Culiseta inornata	Culiseta incidens	Culiseta Particeps	Culiseta minnesotae	Coquillettidia perturbans
1998	X	X	X	X		X	X	X	X	X	X			X
1999	X	X	X	X	X	X	X	X	X	X	X			X
2000	X	X	X	X	X	X	X	X	X	X	X		X	X
2001	X	X		X	X	X	X	X	X	X	X	X		X
2002	X	X	X		X	X	X	X	X	X	X	X		X
2003	X	X		X	X	X	X	X	X	X	X			X

Mosquitoes trapped in 2003



SPECIES	NUMBER	* The "Other" column includes:	
Ae. vexans	589	Ae. sierrensis	1
Oc. sticticus	660	Cs. inornata	1
Ae. washinoi	20	Cq. perturbans	1
Cx. pipiens	240		
Cx. tarsalis	255		
An. freeborni	9		
An. punctipennis	40		
Cs. incidens	25		
Other*	3		

The chart above shows the number of mosquitoes that were identified in our trapping program. Thirty (30) traps were set out over the season and approximately 11,000 mosquitoes were collected. 1,841 of these mosquitoes were identified. The results from individual traps and areas are shown in following charts.

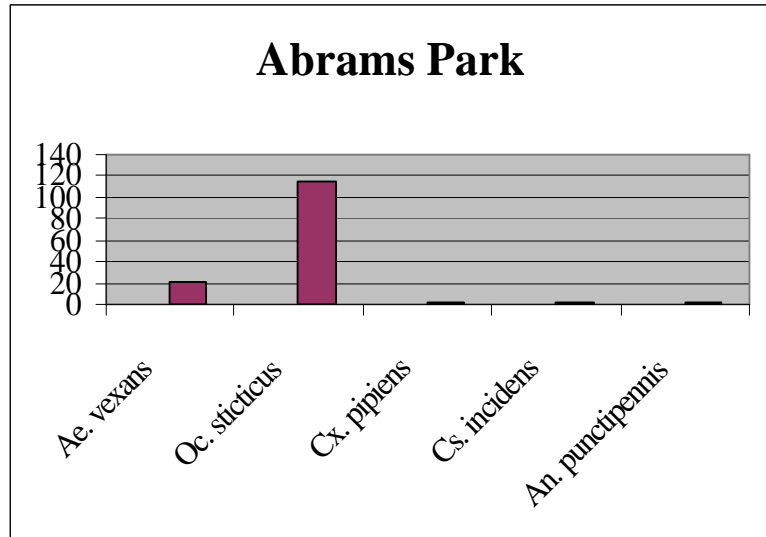
Ridgefield Results

There were seven (7) traps placed in the Ridgefield area this year. The charts below show the total number of mosquitoes trapped in each area. Once again this area showed mainly the flood water species (Ae. vexans and Oc. Sticticus).

Total # trapped in Ridgefield — 5,050 (approx.) Total # ID'd — 614

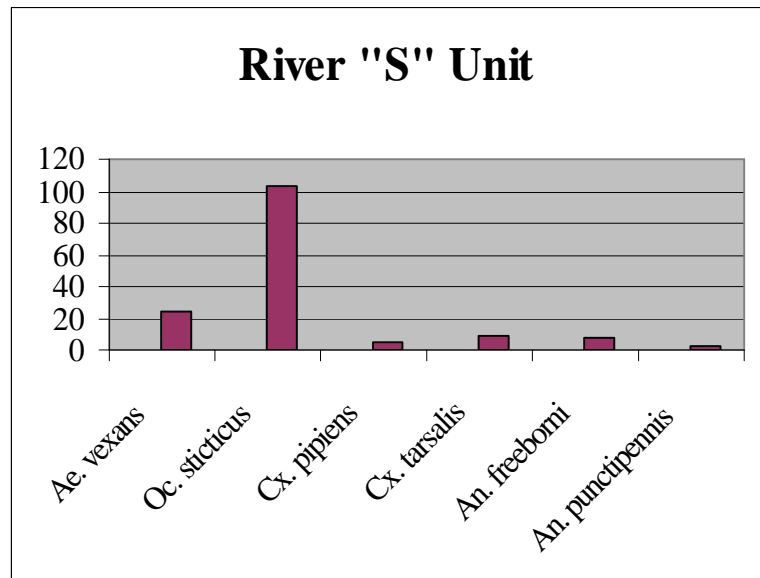
ABRAMS PARK

SPECIES	NUMBER
Ae. vexans	22
Oc. sticticus	115
Cx. pipiens	2
Cs. incidens	2
An. punctipennis	1



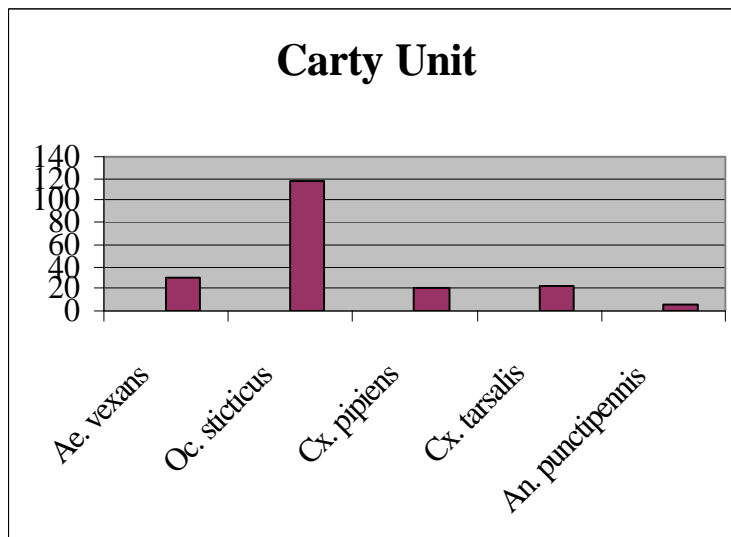
RIVER 'S' UNIT

SPECIES	NUMBER
Ae. vexans	24
Oc. sticticus	103
Cx. pipiens	5
Cx. tarsalis	9
A. freeborni	8
An. punctipennis	3



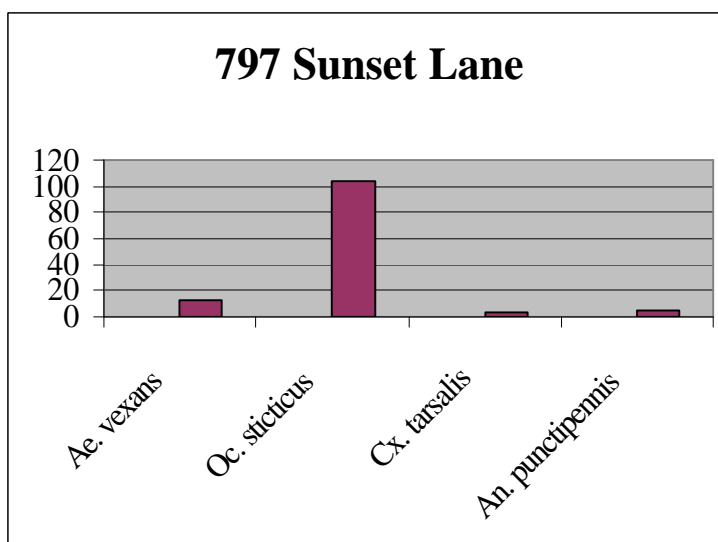
CARTY UNIT

SPECIES	NUMBER
Ae. vexans	29
Oc. sticticus	117
Cx. pipiens	20
Cx. tarsalis	22
An. punctipennis	5



797 SUNSET LANE

SPECIES	NUMBER
Ae. vexans	29
Oc. sticticus	117
Cx. pipiens	20
Cx. tarsalis	22
An. punctipennis	5

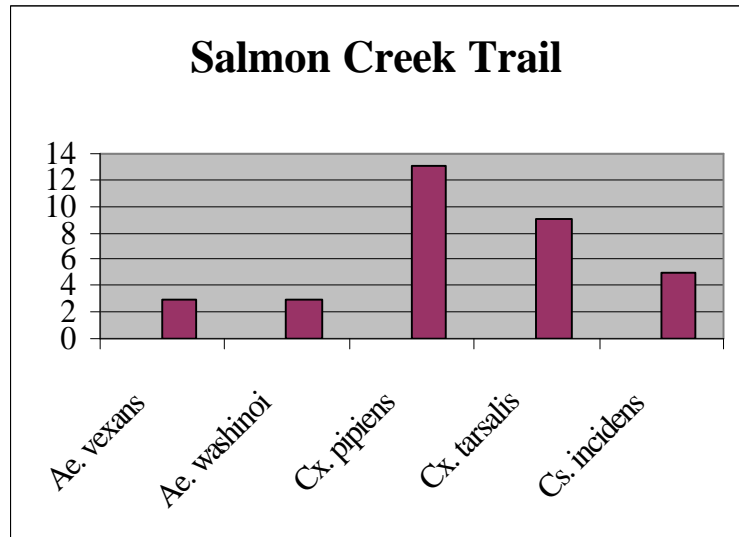


Salmon Creek Results

Seven (7) traps were placed in the Salmon Creek area this year. Again, the totals shown on the charts reflect the total number for the given trapping site. One site, located at 610 NW 133rd Circle, yielded no identifiable mosquitoes.

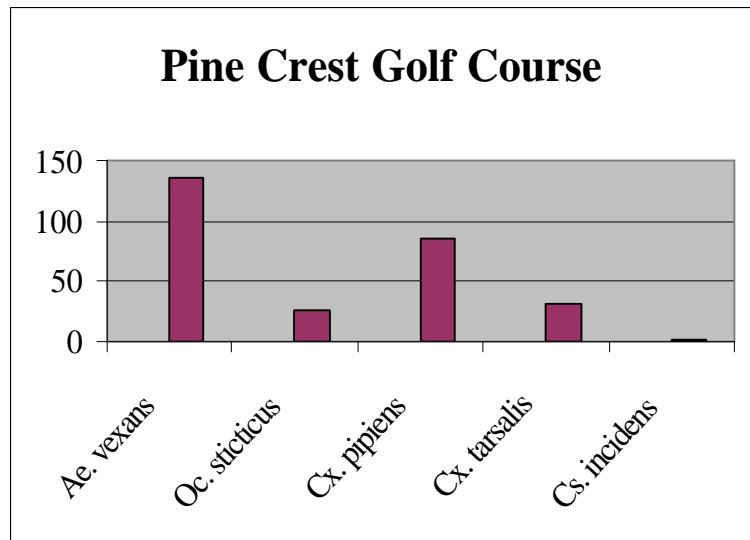
SALMON CREEK TRAIL

SPECIES	NUMBER
Ae. vexans	3
Ae. washinoi	3
Cx. pipiens	13
Cx. tarsalis	9
Cs. incidens	5



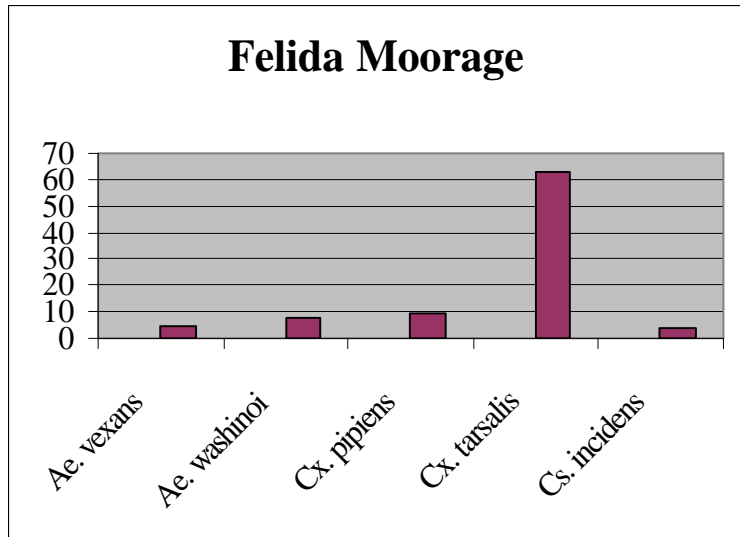
PINE CREST GOLF COURSE

SPECIES	NUMBER
Ae. vexans	136
Oc. sticticus	27
Cx. pipiens	85
Cx. tarsalis	31
Cs. incidens	2



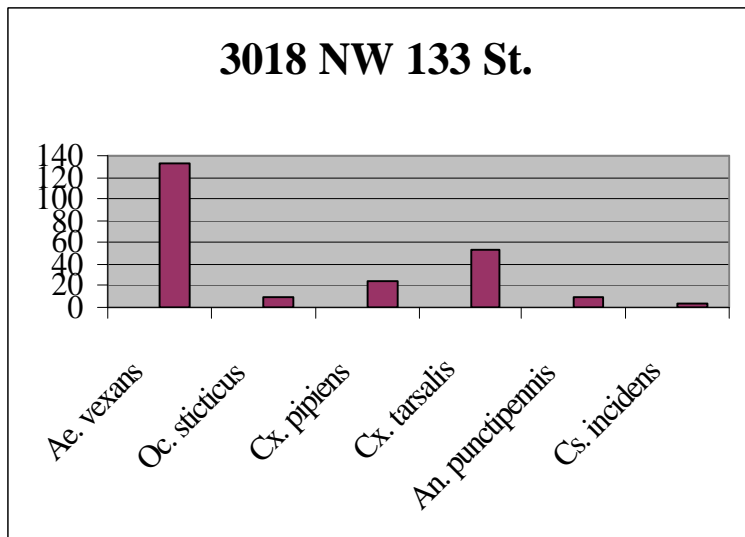
FELIDA MOORAGE

SPECIES	NUMBER
Ae. vexans	5
Ae. washinoi	8
Cx. pipiens	9
Cx. tarsalis	63
Cs. incidens	4



3018 NW 133 STREET

SPECIES	NUMBER
Ae. vexans	132
Oc. sticticus	10
Cx. pipiens	25
Cx. tarsalis	53
An. punctipennis	10
Cs. incidens	4

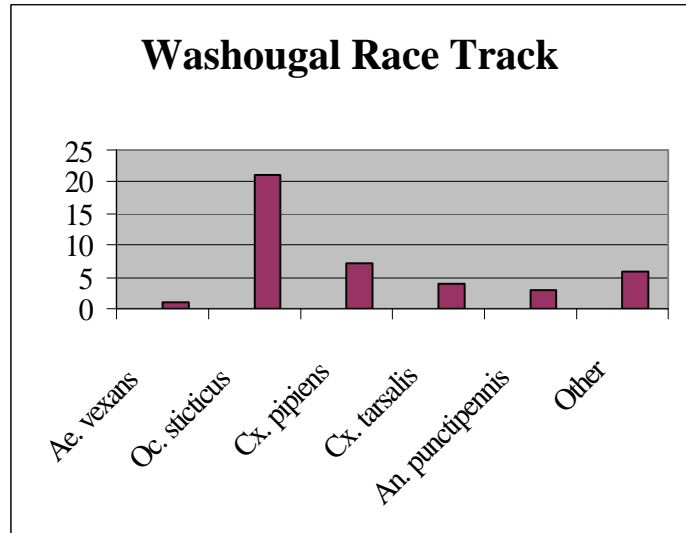


Camas/Washougal Results

There were six (6) traps set in the Camas/Washougal area this year. The mosquitoes found varied, depending on the site and its relation to the floodwaters of the river. As with the other area results, the charts below reflect the total numbers for the given sites.

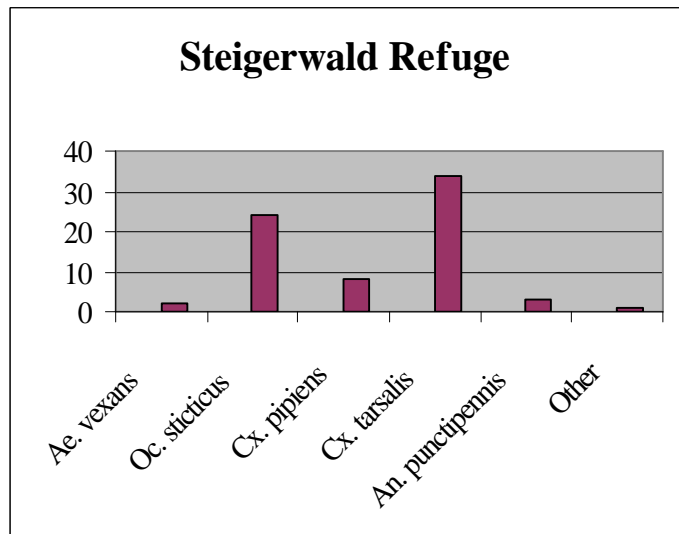
WASHOUGAL RACE TRACK

SPECIES	NUMBER
Ae. vexans	1
Oc. sticticus	21
Cx. pipiens	7
Cx. tarsalis	4
An. punctipennis	3
Other	6



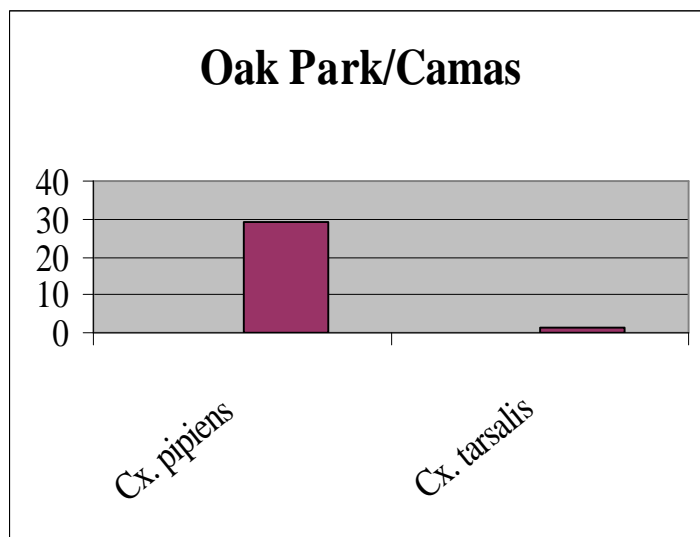
STEIGERWALD REFUGE

SPECIES	NUMBER
Ae. vexans	2
Oc. sticticus	24
Cx. pipiens	8
Cx. tarsalis	34
An. punctipennis	3
Other	1



OAK PARK/CAMAS

SPECIES	NUMBER
Cx. pipiens	29
Cx. tarsalis	1

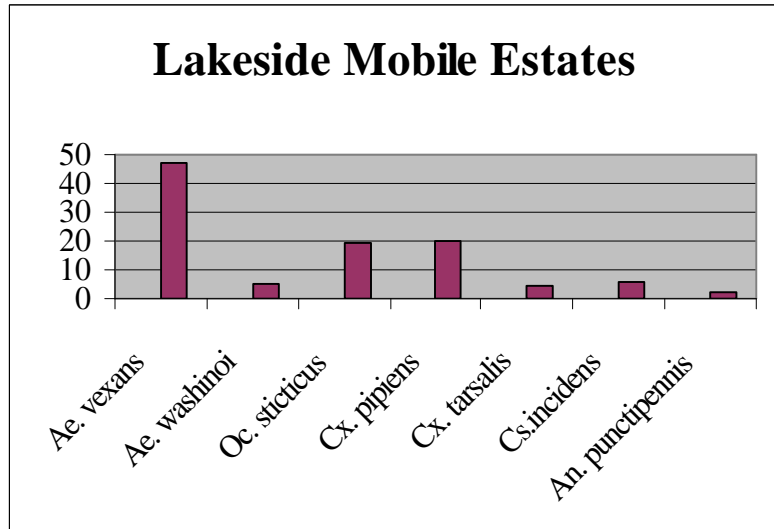


Vancouver Lake Results

The Vancouver Lake area had a total of six (6) traps set this year. As was expected, the species found most was of the floodwater variety. One trapping that was done at Vancouver Lake Park came up totally empty. The other three areas are shown in the charts below.

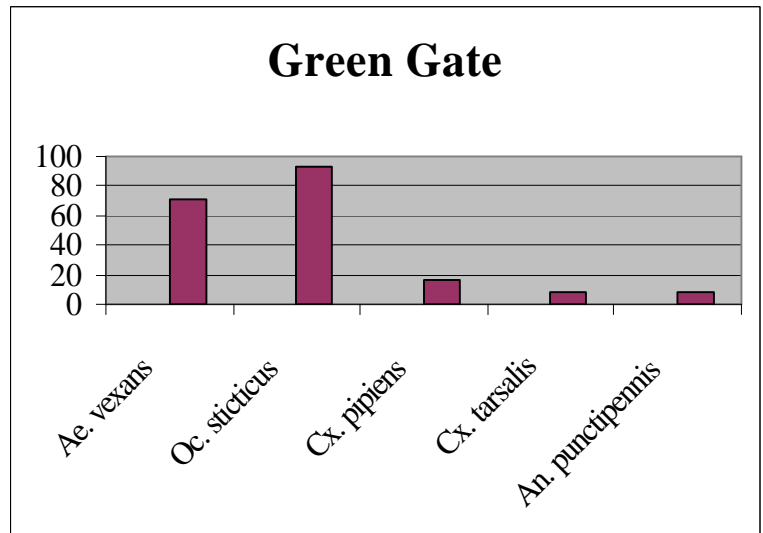
LAKESIDE MOBILE ESTATES

SPECIES	NUMBER
Ae. vexans	132
Oc. sticticus	10
Cx. pipiens	25
Cx. tarsalis	53
An. punctipennis	10
Cs. incidens	4



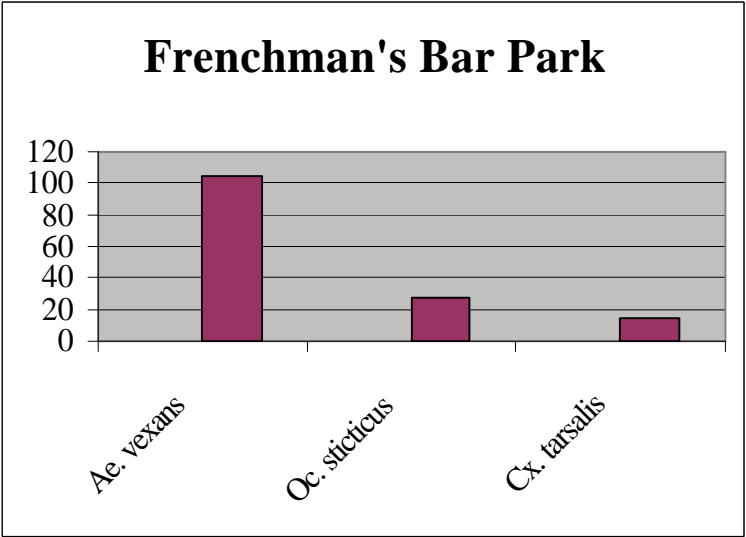
GREEN GATE

SPECIES	NUMBER
Ae. vexans	71
Oc. sticticus	93
Cx. pipiens	17
Cx. tarsalis	8
An. punctipennis	8



FRENCHMAN’S BAR PARK

SPECIES	NUMBER
Ae. vexans	105
Oc. sticticus	27
Cx. tarsalis	14



Trapping Sites





2003

Area	Site	Site #	Dip Site	Latitude	Longitude	Date(s)		
Ridgefield	Carty Unit	14-42-13-a1	14019	45°50.026	122°45.648	5/5/03	6/23/03	8/20/03
	River "S" Unit	14-33-24-c3	0	45°48.493	122°44.856	5/5/03	6/23/03	8/20/03
	797 Sunset Lane	14-34-19-d3	0	N/A	N/A	5/5/03	6/23/03	
	Abrams Park	14-34-19-a3	14044	45°49.121	122°44.277	5/5/03	6/23/03	8/20/03
Salmon Creek	Pine Crest Golf Course	18-25-21-d3	10022	45°45.439	122°43.742	6/17/03	8/20/03	
	Salmon Creek Trail	10-25-28-b4	10030	45°42.875	122°41.400	5/28/03		
	Felida Moorage	10-25-29-d4	10010	45°42.414	122°43.227	5/28/03		
	610 NW 133rd Circle	18-26-27-a2	0	45°43.057	122°40.611	6/10/03		
	3018 NW 133rd Street	18-25-28-a4	77221	45°43.110	122°42.200	6/10/03	8/19/03	
Vancouver Lake	Frenchman's Bar Park	10-15-1-a4	10033	45°41.068	122°46.016	6/17/03		
	Lakeside Mobile Estates	10-16-9-d1	10009	45°40.180	122°41.855	5/28/03	8/19/03	
	Vancouver Lake Park	10-16-6-a2	10025	45°40.781	122°44.588	5/28/03		
	Green Gate (north end of Erwin O. Reiger Memorial Hwy)	10-16-31-b4	10024	45°41.847	122°43.742	6/17/03	8/26/03	
Camas-Washougal	Steigerwald Refuge	15-5-22-b1	15005	45°33.583	122°17.967	6/18/03	8/26/03	
	Washougal Race Track	15-4-20-b2	15001	45°34.055	122°20.402	6/18/03	8/26/03	
	3rd Street Loop	11-3-12-a3	11001	N/A	N/A			
	Oak Park	11-3-11-c3	0	45°34.796	122°23.715	6/18/03	8/26/03	

Clark County, Washington
Mosquito Trapping Site Map
May – August, 2003



Legend:

-  Ridgefield Area Sites
-  Salmon Creek Area Sites
-  Vancouver Lake Area Sites
-  Camas/Washougal Area Sites



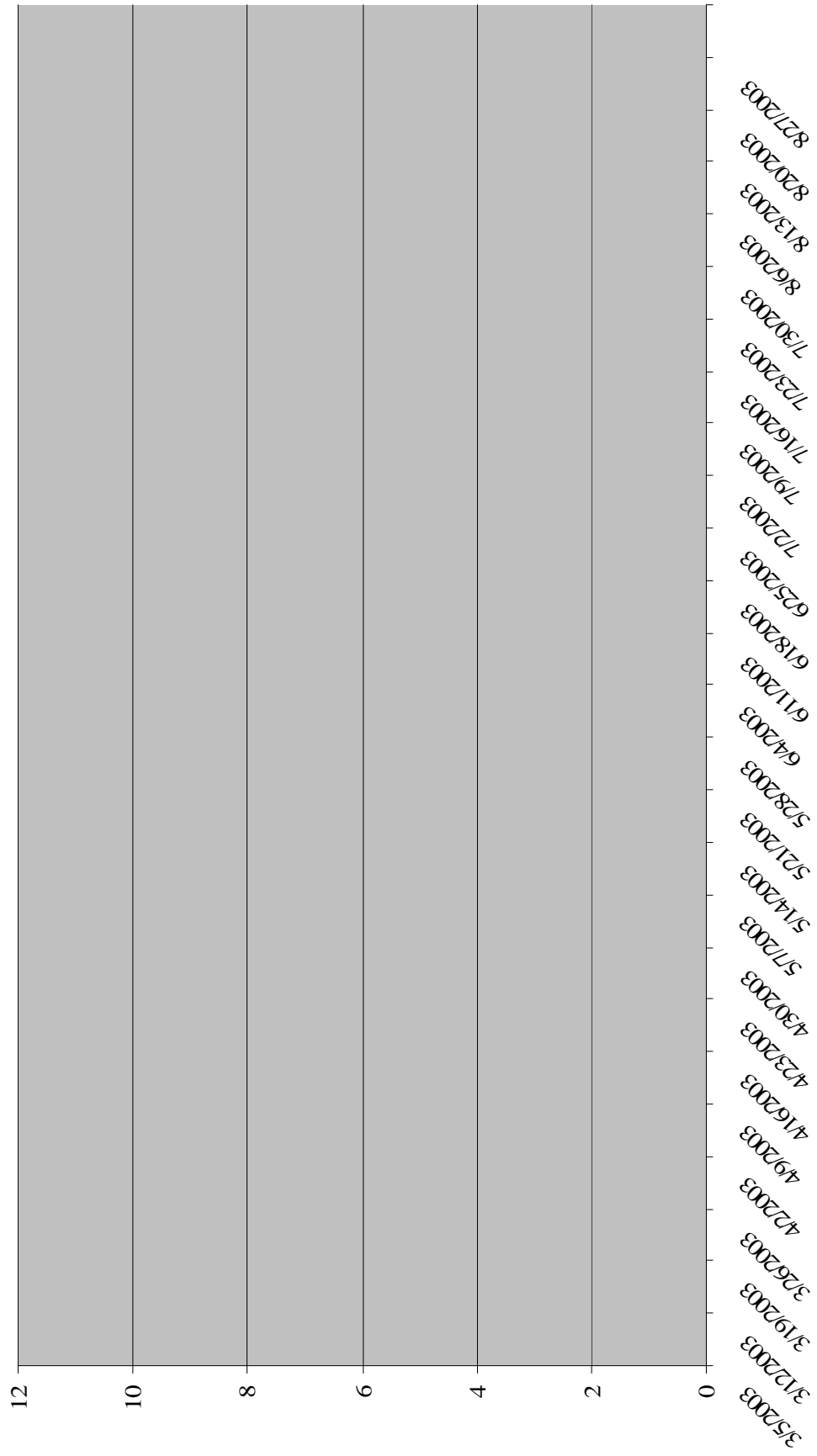
West Nile Virus Testing 2003

Date	Location of Sample	Species Tested	Number	Test Results
5/28/03	Salmon Creek Trail	Cx pipiens	12	Negative
5/28/03	Felida Moorage by Railroad Tracks	Cx tarsalis	22	Negative
6/10/03	3018 NW 133rd Circle RP 221	Cx tarsalis	12	Negative
6/18/03	Frenchman's Bar Park	Cx tarsalis	14	Negative
6/18/03	Pine Crest Golf Course	Cx pipiens	3	Negative
6/19/03	Steigerwald Refuge	Cx tarsalis	10	Negative
6/19/03	Oak Park, Camas	Cx pipiens	12	Negative
8/19/03	Vancouver Lake Trailer Park	Cx pipiens	20	Negative
8/19/03	3018 NW 133rd Circle RP 221	Cx pipiens	10	Negative
8/20/03	Pine Crest Golf Course	Cx pipiens	20	Negative
8/26/03	Oak Park, Camas	Cx pipiens	10	Negative

**Washington State Department of Health
West Nile Virus Surveillance Testing Summary
September 5, 2003**

County	Horses		Birds		Sentinel Flocks		Mosquito Pools	
	Tested	Positive	Tested	Positive	Tested	Positive	Tested	Positive
Adams	0	0	2	0	0	0	0	0
Asotin	1	0	0	0	0	0	0	0
Benton	1	0	18	0	395	0	191	0
Chelan	0	0	7	0	0	0	0	0
Clallam	1	0	4	0	0	0	0	0
Clark	1	0	4	0	0	0	11	0
Columbia	0	0	0	0	0	0	0	0
Cowlitz	0	0	7	0	0	0	26	0
Douglas	0	0	2	0	0	0	0	0
Ferry	0	0	0	0	0	0	0	0
Franklin	2	0	8	0	0	0	0	0
Garfield	0	0	0	0	0	0	0	0
Grant	0	0	3	0	0	0	0	0
Grays Harbor	0	0	4	0	0	0	0	0
Island	0	0	30	0	0	0	0	0
Jefferson	0	0	12	0	0	0	0	0
King	2	0	98	0	0	0	0	0
Kitsap	3	0	25	0	0	0	0	0
Kittitas	3	0	1	0	0	0	0	0
Klickitat	0	0	2	0	0	0	0	0
Lewis	1	0	20	0	0	0	0	0
Lincoln	0	0	1	0	0	0	0	0
Mason	0	0	17	0	0	0	0	0
Okanogan	1	0	1	0	0	0	0	0
Pacific	0	0	7	0	0	0	0	0
Pend Oreille	1	0	6	0	0	0	0	0
Pierce	4	0	90	0	0	0	0	0
San Juan	0	0	11	0	0	0	0	0
Skagit	1	0	26	0	0	0	0	0
Skamania	0	0	1	0	0	0	0	0
Snohomish	3	0	144	0	0	0	0	0
Spokane	7	0	15	0	0	0	0	0
Stevens	0	0	9	0	0	0	0	0
Thurston	1	0	47	0	0	0	0	0
Wahkiakum	0	0	1	0	0	0	0	0
Walla Walla	2	0	8	0	0	0	0	0
Whatcom	3	0	34	0	0	0	0	0
Whitman	3	0	11	0	0	0	0	0
Yakima	5	0	5	0	0	0	0	0
Totals	46	0	681	0	395	0	228	0

River Level 2003



Mosquito Identification 2003

Sample Date	Location	Dipsite #	Stage	Species	I.D. Date	I.D. By
3/13/2003	3300 NE 78th Street		Larva & adult	Cs. incidens	4/21/2003	CRS
3/18/2003	Washougal Race Track	15001	Larva	Oc. sticticus	4/7/2003	CRS
3/18/2003	West end SE Forest St	77020	-----	Males only	4/7/2003	CRS
3/19/2003	Astor Street, Camas		Larva	Cs. incidens	4/7/2003	CRS
3/20/2003	Round Lake ditch	10008				
4/7/2003	Ridgefield sewage	14043	Larva	Cs. incidens	4/28/2003	CRS
4/7/2003	1500 SE Hillhurst, Ridge.		Larva & adult	Cs. incidens	4/28/2003	CRS
4/8/2003	Heron Ridge, Ridgefield		Larva	Cs. incidens	4/11/2003	CRS
4/9/2003	20201 NE 96th Avenue		Larva	Cs. incidens	4/11/2003	CRS
4/10/2003	16900 NE 259 Street		Larva	Cs. incidens	4/11/2003	CRS
4/10/2003	119th Street & Hwy 99		Larva	Cs. incidens	4/11/2003	CRS
4/14/2003	22900 Cornell Drive		Larva	Cs. incidens	4/15/2003	CRS
4/15/2003	1900 NE 99th Street	77209	Adult	Midges	4/18/2003	CRS
4/22/2003	Reed Island	15003	Larva & adult	Ae. vexans	5/12/2003	CRS
4/24/2003	2562 Norwood, Camas		Larva	Cs. incidens	5/2/2003	CRS
4/24/2003	2708 Logan, Camas		Larva	Cs. incidens	5/2/2003	CRS
4/25/2003	Felida Moorage	10010	Larva	Ae. vexans	5/2/2003	CRS
4/25/2003	Felida Road by railroad		Larva & adult	Cs. incidens	5/2/2003	CRS
4/28/2003	Morgan long meadow	14003	Larva	Ae. vexans	5/2/2003	CRS
4/28/2003	Green Gate south	10025	Larva	Ae. vexans	5/2/2003	CRS
5/1/2003	Salmon Creek north side	18013	Larva	Ae. vexans	5/2/2003	CRS
5/1/2003	1319 Stutz Rd.		Adult	Cs. incidens	5/12/2003	CRS
5/6/2003	1800 block NE 199th St		Adult	Cs. incidens	5/21/2003	CRS
5/6/2003	NW 11 St & 15 Cir, Camas		Adult	Cs. incidens	5/21/2003	CRS
5/6/2003	SE 41st Dr & 192nd Ave		Larva	Cx. pipiens	5/22/2003	CRS
5/7/2003	Marine Park	10015	Larva	Oc. sticticus	5/8/2003	CRS
5/8/2003	18718 NE Cedar Drive		Larva	Cs. incidens	5/8/2003	CRS
5/8/2003	21116 NE 68th Street		Larva	Cs. incidens	5/12/2003	CRS
5/9/2003	Steigerwald Pond		Larva	Cx. pipiens	5/12/2003	CRS
5/12/2003	402 NE 109th Street		Adult	Cs. incidens	5/27/2003	CRS
5/17/2003	Carty Unit	14045	Adult	Ae. vexans	6/3/2003	CRS
5/19/2003	Alcoa Trail Van. Lake		Larva	Ae. vexans	6/3/2003	CRS
5/30/2003	Carty Unit	14046	Adult	Ae. vexans	6/16/2003	CRS
5/30/2003	Carty Unit	14045	Adult	Ae. vexans	6/16/2003	CRS
6/2/2003	Morgan long meadow	14006	Larva	Ae. vexans	6/16/2003	CRS
6/2/2003	3rd Street Loop, Camas	11001	Adult	Ae. vexans	6/16/2002	CRS
6/2/2003	Green Gate south	10025	Larva	Oc. sticticus	6/10/2003	CRS
6/6/2003	Oak Park, Camas		Adult	Oc. sticticus	6/16/2003	CRS

Sample Date	Location	Dipsite #	Stage	Species	I.D. Date	I.D. By
6/10/2003	Clark Co. Amphitheater		Larva	Cx. tarsalis	6/11/2003	CRS
6/10/2003	36th Avenue & 141st Street		Adult	Cx. pipiens	6/23/2003	CRS
6/17/2003	Post Office Lake	10007	Larva	Cx. tarsalis	6/18/2003	CRS
6/24/2003	21116 NE 68th Street		Adult	Cx. territans	7/3/2002	CRS
6/25/2003	9205 NE 65th Street		Larva & adult	Cs. incidens	7/7/2003	CRS
7/1/2003	SE 115 Av & Evergreen Hwy		Adult	Cx. tarsalis	7/21/2003	CRS
7/2/2003	Post Office Lake	10007	Larva	Cx. tarsalis	7/7/2003	CRS
7/3/2003	17201 NE 164th Street		Adult	Cx. territans	7/21/2003	CRS
7/9/2003	Marine Park		Adult	Cx. pipiens	7/21/2002	CRS
7/14/2003	East Sewage	10013	Adult	Cx. pipiens	7/24/2003	CRS
7/14/2003	East Sewage	10013	Adult	Cx. tarsalis	7/24/2003	CRS
7/14/2003	Clark County Amphitheater		Adult	Cx. pipiens	7/24/2003	CRS
7/25/2003	NW 24th Ave & 124th Street		Larva	Cx. pipiens	7/28/2003	CRS
7/28/2003	NE 42nd Ave & 56th Street		Adult	Cx. pipiens	7/29/2003	CRS
				Cs. incidens		
7/29/2003	42nd & J Street, Washougal	77083	Larva	Cx. pipiens	7/30/2003	CRS
7/29/2003	NE 86th Ave & 20th Street		Larva	Cx. pipiens	7/30/2003	CRS
7/30/2003	3500 SE Sunset Lane	77156	Adult	Cx. tarsalis	8/5/2003	CRS
7/30/2003	2400 SE 192nd Avenue		Larva	Cx. pipiens	8/5/2003	CRS
7/30/2003	13515 NE 1st Place	catch basin	Larva	Cx. pipiens	7/31/2003	CRS
7/30/2003	105 NW 103rd Street		Larva	Cx. pipiens	7/31/2003	CRS
				Cs. incidens		
7/31/2003	Lady Island east end	11002	Adult	Cx. pipiens	8/8/2003	CRS
				Cx. tarsalis		
8/1/2003	Lady Island pond	11003	Adult	Cx. pipiens	8/21/2003	CRS
				Cx. tarsalis		
				An. punctipennis		
8/1/2003	NE 209th St & 10th Ave		Larva & adult	Cx. pipiens	8/21/2003	CRS
				Cx. tarsalis		
				An. punctipennis		
8/11/2003	11500 NE 34th Avenue		Larva	Cx. pipiens	8/19/2003	CRS
8/25/2003	14010 NE 53rd St	catch basin	Larva	Cs. incidens	8/26/2003	CRS
8/25/2003	Mill pond, Washougal	15002	Larva & adult	Cx. pipiens	9/8/2003	CRS
				Cx. tarsalis		
8/29/2003	West sewage	10011	Adult	Cx. pipiens	9/8/2003	CRS
8/29/2003	NE 20 Ave & 153 St	catch basin	Adult	Cs. incidens	9/8/2003	CRS
				Cx. pipiens		
				Cx. tarsalis		
9/5/2003	Dump station	77148	Adult	Cx. pipiens	9/9/2003	CRS
9/8/2003	Battle Ground	catch basin	Larva	Cx. pipiens	9/9/2003	CRS